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10/644,883

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Dae-Sik Kim

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EXAMINER

SEVER, ANDREW T

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/644,883

Applicant(s)

KIM ET AL.

Examiner

Andrew T. Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-34 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 20 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/14/2004.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 1-21, 26-30, 32, and 33 is withdrawn in view of the newly discovered reference(s) to Lambert (US 6,288,815). Rejections based on the newly cited reference(s) follow. In view of the new rejection the finality of the previous rejection is withdrawn.

Claim Objections

2. Claims 8, 10, and 21 are objected to because of the following informalities: it has an incorrect dependency. Appropriate correction is required.

It should be dependent on claim 2, as claim 1 does not have first and second fly eye lenses and therefore these claims as currently written lacks antecedent basis for first and/or second fly eye lenses.

3. Claim 21 is separately objected to because of the following informalities: spelling. Appropriate correction is required.

First fly-eye lens should be "lenses". (There is no antecedent basis or enabling disclosure of any use of a single fly-eye lens.)

Applicant is advised to review all claims to insure proper grammar/spelling as well as correct antecedent basis of all claimed elements.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 13 recites the limitation "number of cylinder lens cells as that of the light emitting units" in claim 1. There is insufficient antecedent basis for this limitation in the claim.

It is not known how a light-emitting unit has cylinder lens cells (or at least which part of the light-emitting unit applicant is referring to) and claim 1 gives no basis for making such a judgment. Since the claim is indefinite and one of ordinary skill in the art would not be able to determine what is meant to be claimed, claim 13 is rejected. No prior art rejection will be made, since one of ordinary skill in the art would not know how many cylinder lens cells are required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 2851

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-12 and 14-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kruschwitz et al. (US 6,594,090) and Lambert (US 6,288,815.)

Kruschwitz teaches in figure 2 a projection system comprising:

Light emitting units (20) emitting light beams of different wavelengths (see column 4 lines 28-43);

A scrolling unit (34) which separates the light beams into color beams and scrolls the color beams; and

A light valve (74) that receives the color beams transmitted by the scrolling unit and forms a color image by turning pixels on or off according to an input image signal.

Kruschwitz does not teach that the scrolling unit has spirally arranged cylinder lens cells.

Lambert teaches in figure 7B a cylindrical lens structure which is spirally disposed (see column 11 line 12-14). Although Lambert teaches only a single spiral lens in figure 7B in an alternative taught in lines 22-26 (not shown), Lambert teaches a plurality of lens arrays (spiral lens cells) arranged on a single shaft. Lambert teaches in column 5 lines 51

Art Unit: 2851

through column 6 lines 29 that by providing a scrolling unit (scanning element) that has optical power (such as the spiral lens embodiment of figure 7B described above in the plurality) optical errors caused by the scanning function and by other parts of the projection device can be corrected producing a better scanned image (and those of ordinary skill in the art would recognize potentially a higher resolution.) Lambert also teaches in column 8 lines 1-40 by using a rotating scrolling unit instead of the linear kind taught by Kruschwitz, discontinuities can be eliminated. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a scrolling unit having spirally arranged cylinder lens cells to separate the light beams as taught by Lambert in the projection system of Kruschwitz.

With regards to applicant's claim 2:

Kruschwitz teaches fly-eye lenses 42a and 42b.

With regards to applicant's claim 3:

Relay lenses are present but not labeled.

With regards to applicant's claims 4 and 9:

The light emitting units are laser diode (although Kruschwitz teaches a single laser which is then converted by OPOs to produce three color laser lights (Red green and yellow), see column 4 lines 27-43.)

With regards to applicant's claim 5:

See figure 5 of Kruschwitz which teaches sets of lenses (112 and 122) that include cylindrical lenses (see column 10 lines 32-48.)

With regards to applicant's claims 6, 8, and 21:

Kruschwitz teaches a lens 30 for collimating the light beams emitted from the light emitting units.

With regards to applicant's claim 7:

Kruschwitz teaches an embodiment utilizing optical fibers see column 4 lines 27-43.

With regards to applicant's claims 10 and 11:

See column 5 lines 1-40.

With regards to applicant's claims 12 and 14:

Lambert as described above teaches 2 cylinder lens cells and in light of other embodiments such as figure 7C it would be obvious for it to include 3 or more cells since the other embodiments teach more than 2 cells. (Applicant should review if this teaching of Lambert meets applicant's intended language for claim 13.)

With regards to applicant's claims 15-18:

As described by Lambert, the scrolling unit rotates at a constant speed in a direction and one of ordinary skill in the art would recognize that there is a direct relationship between that speed and the number of units (Lambert describes one such situation in column 11 lines 13-29.)

With regards to applicant's claim 19:

The scrolling unit is a single optical element.

With regards to applicant's claim 20:

The three colors emitted in Kruschwitz are red, green, and blue.

With regards to applicant's claims 22-25:

The method of projecting an image using the projection system of Kruschwitz in view of Lambert is obvious (See MPEP 2112.02.)

With regards to applicant's claim 26:

The method of Lambert described with regards to the projection system above is an equivalent alternative to linearly traveling optical element scrolling system (see figure 5 of Lambert for example) in the way it scrolls the light (although as described above it

Art Unit: 2851

includes discontinuities) and accordingly the system described above by Lambert would be equivalent.

With regards to applicant's claims 27-29:

See above.

With regards to applicant's claims 30, 32, and 33:

See above with respect to claim 5.

With regards to applicant's claim 31:

See above.

With regards to applicant's claim 34:

See above.

Response to Arguments

9. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

Since Lambert was disclosed in applicant's IDS this rejection is made final.

Conclusion

10. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 12/14/2004 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Art Unit: 2851

US 6,508,554 to Hatakeyama et al. teaches in figure 1 a projector with 3 light source 206 and among other things a scrolling unit 213.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS



Alan A. Mathews
Primary Examiner